Claims

What is claimed:

1. A method of wirelessly transmitting between a base station and a plurality of users, the method comprising:

    determining a transmission link quality between a user and the base station;

    assigning a class type to the user based upon the transmission link quality; and

    setting a channelization mode for transmission with the user based upon the class type.

2. The method of claim 1, wherein the channelization mode determines a quantity of frequency spectrum allocated for transmission between the user and the base station.

3. The method of claim 2, wherein the quantity of frequency spectrum allocated is for the duration of a particular transmission time slot.

4. The method of claim 2, wherein the allocated frequency spectrum comprises contiguous frequency slots.

5. The method of claim 4, wherein the frequency slots comprise multi-carrier signals.

6. The method of claim 4, wherein the frequency slots comprise single carrier signals.

7. The method of claim 2, wherein the allocated frequency spectrum comprises non-contiguous frequency slots.

8. The method of claim 7, wherein the frequency slots comprise multi-carrier signals.

9. The method of claim 7, wherein the frequency slots comprise single carrier signals.

10. The method of claim 1, further comprising:

    communicating the class type of the user to a MAC scheduler;

    the MAC scheduler scheduling all transmission between the base station and the user by assigning transmission frequency slots and transmission time slots to the user, wherein a number of frequency slots assigned to the user per time slot is based on the class type of the user.

11. The method of claim 10, wherein the number of frequency slots assigned to the user per time slot is further based on real-time system traffic load between the base station and the plurality of users.

12. The method of claim 10, wherein the number of frequency slots assigned to the user per time slot is further based on a quality of service associated with the user.

13. The method of claim 10, wherein the frequency slots comprise multi-carrier signals.

14. The method of claim 10, wherein the frequency slots comprise single carrier signals.

15. The method of claim 10, wherein the frequency slots are contiguous.

16. The method of claim 10, wherein the frequency slots are not contiguous.

17. The method of claim 10, wherein the frequency slots are interleaved.

18. The method of claim 10, wherein a maximum possible number of frequency slots assigned to the user per time slot is based on the class type of the user.

19. The method of claim 18, wherein the maximum possible number of frequency slots assigned to the user per time slot is further based on real-time system traffic load between the base station and the plurality of users.

20. The method of claim 18, wherein the maximum possible number of frequency slots assigned to the user per time slot is further based on a quality of service associated with the user.

21. The method of claim 10, wherein predetermined frequency slots within predetermined time slots are allocated for transmission with users having a particular class type.

22. The method of claim 10, wherein the class type of each of the users determines a priority in the MAC scheduler assignment of predefined transmission frequency slots and transmission time slots to the users.

23. The method of claim 1, wherein the transmission link quality between the user and the base station is determined dynamically.

24. The method of claim 1, wherein the transmission link quality between the user and the base station is determined periodically.

25. The method of claim 1, wherein the transmission link quality between the user and the base station is determined when the user is powered up.

26. The method of claim 1, wherein determining a transmission quality comprises estimating an SNR of signal transmission between the base station and the user.

27. The method of claim 1, wherein determining a transmission quality comprises estimating a PER of data transmitted between the base station and the user.

28. The method of claim 10, wherein each of the plurality of users are assigned a class type, and

   the MAC assigns frequency slots to users having a common class type according to a round robin scheduling scheme.

29. The method of claim 10, wherein each of the plurality of users are assigned a class type, and

   the MAC assigns frequency slots to users having different class types according to a round robin scheduling scheme.

30. A method of wirelessly transmitting from a base station to a plurality of users, the method comprising:

   transmitting information from the base station to a subscriber unit;

   receiving from the subscriber a transmission link quality between a user and the base station;

   assigning a class type to the user based upon the transmission link quality; and

   setting a channelization mode for transmission with the user based upon the class type.

31. A system for wirelessly transmitting between a base station and a plurality of users, the system comprising:

means for determining a transmission link quality between a user and the base station;

means for assigning a class type to the user based upon the transmission link quality; and

means for setting a channelization mode for transmission with the user based upon the class type.